Management system standards for oil and gas industry

ISO/TC 67/WG 2 “Operating integrity management for the petroleum, petrochemical and natural gas industries”

version December 2018
Outline

• Scope of ISO/TC 67/WG 2
• Background: ISO/TC 67 developments
• Background: IOGP developments
• Development of operating management system standard (ISO 29010)
• Revision of quality management system standard (ISO 29001)
• Other standards in ISO/TC 67/WG 2 portfolio
Scope of ISO/TC 67/WG 2

• Provide requirements, guidance and tools to support organisations within the petroleum, petrochemical and natural gas industries in establishing and implementing management, quality and conformity assessment processes to reduce operating risk and drive improvement throughout their business activities
Montara (left) and Macondo (right) oil spill accidents, also killing people

• ISO/TC 67 adopted the following resolution in 2010:

Resolution 2010/12 (Doha, 2010) – Action plan on recent industry events

In light of the latest Montara (West Australia) and Macondo (US Gulf of Mexico) accidents, ISO/TC 67 requests

— the affected subcommittees to review urgently their existing work programs and work together with outside standards development organizations to coordinate the development of critical or high-priority standards needed to address urgent needs of the oil and gas industry and new or developing regulations;

— to establish an MC ad-hoc group (AHG) to prepare a roadmap/action plan on the ISO/TC67 standards, which should be revised or developed in response to the latest accidents and this AHG to report on their proposals to the ISO/TC67 Secretariat no later than December 31st 2010.

— the MC to discuss and agree on the action plan to be taken ultimately at their meeting in Brussels, February 2011 and to report to ISO/TC 67 accordingly.
Action plan industry events was published in March 2011, identifying 31 standards to be updated or newly developed.

Related to MSS, action plan proposed to develop **new ISO standard** based on inter alia OGP Report 210, IPIECA document, and API RP 75.
Background: ISO/TC 67 developments (3)

Quality management system standard

• Oil and gas industry published first edition of sector-specific QMS standard for product and service supply organizations, supplementing ISO 9001, in 2003
• ISO/TS 29001 is used as example in plug-in model for ISO MSS:
Background: ISO/TC 67 developments (4)

Structure for management systems

• Discussion paper on structure for management systems in ISO/TC 67 (through its management committee)
• Establishing AHG Management system standards structure in ISO/TC 67 per resolution 2013/21 (Oslo), ‘allocated’ to ISO/TC 67/WG 2
• Basic ideas for structure of MSS in oil and gas industry:
  – Based on high level structure for MSS (Annex SL)
  – Full standard rather than technical specification
  – Building on existing generic ISO standards and well accepted knowledge sources in oil and gas industry
  – Originally based on concept of umbrella operating management system standard interfacing with a series of existing discipline-specific standards
Background: ISO/TC 67 developments (5)

Structure for management systems

Main functional standards [examples]
- Quality management system [ISO 9001/ISO 29001]
- Environmental management system [ISO 14001]
- Occupational health and safety management system [ISO 45001]
- Asset management system [ISO 55001]
- Energy management system [ISO 50001]
- Business continuity management system [ISO 22301]
- Compliance management system [ISO 19600]

Operating management system
- Operating management system for petroleum, petrochemical and natural gas industries

(Industry) standards & guidelines that inform OMS requirements [examples]
- Emergency response [ISO 15554]
- Risk management [ISO 31000]
- Major accident hazard management during design new installations [ISO 17776]
- Well integrity [ISO 16530]
- Process safety [ISO 10418]
- Project management [ISO 21500]
- Energy Institute process safety management framework
- Offshore safety and environmental management program [API RP 75]
Background: IOGP developments (1)

**HSE management system guidelines**

- IOGP published Report 210 in July 1994
- Model for HSE management system:
Background: IOGP developments (2)

Operating management system framework

• IOGP & IPIECA published Reports 510 and 511 in June 2014

• Key drivers for revision of Report 210:
  – Company management systems have developed considerably
  – Scope of systems has expanded
  – Lessons have been learned and many good practices have been shared across industry

• “Operating” applies to every type of upstream or downstream company activity, from construction to decommissioning, throughout entire value chain and lifecycle of business and its products
Background: IOGP developments (3)

Operating management system framework

• OMS framework is designed to help companies define and achieve performance goals and stakeholder benefits, while managing broad and significant range of risks inherent in oil and gas industry

• Key characteristics of an OMS:
  – Providing a holistic approach to risk in context of oil and gas asset operational lifecycles
  – Framework detailing fundamentals, expectations and requirements needed to manage all operating activities
  – Organizations may use it to provide an ‘integrated approach’ to address all operational risks, or may use it in combination with ‘stand-alone’ management systems with a specific risk focus
  – Framework is flexible to allow companies to adjust the system scope to meet their risks and business approach
Background: IOGP developments (4)

Operating management system framework

- OMS framework model: 4 fundamentals underpin 10 elements
Development of OMS standard (1)

Justification

• Developing an OMS standard was identified as one of the priority items in action plan industry events
• IOGP & IPIECA welcomed initiative of ISO/TC 67 to develop OMS standard based on their Reports 510 and 511 and provided letter of support as part of justification study (JS) [required by ISO]
• IRF (International Regulators Forum) welcomed action plan industry events => OMS helpful tool to demonstrate compliance with safety of (offshore) oil and gas operations
• WEF (World Economic Forum) supported initiative and referred to IOGP with which they already cooperate in view of standardisation (e.g. JIP 33 on standardisation of equipment and packages)
• TF leader for updating Handbook on integrated use of MSSs supported initiative and confirmed no duplication of work
Development of OMS standard (2)

Approach

• Use IOGP/IPIECA Report 510 as starting document as this document:
  – Recognises an OMS covers all operating activities providing a framework to help and guide organisations define and achieve performance goals and stakeholder benefits, whilst managing inherent risks
  – Offers single point flexibility to drive continual improvement, focus and react to a wide range of risks and threats, and to integrate functional management standard requirements and deliverables
  – Addresses the hierarchy of a top system (i.e. OMS) and the sub-systems, in which the expectations within the OMS framework result in establishment of a range of more specific sub-systems, processes and practices to meet particular needs
Development of OMS standard (3)

Approach (continued)

• Configure IOGP/IPIECA Report 510 in line with HLS (Annex SL) to develop OMS standard that:
  – Provides a framework consistently delivering business results through discipline related management system requirements and ensure consistency of common processes
  – Incorporates specific operating requirements and standardisation guidance
  – Incorporates latest best practices/lessons learnt and well accepted knowledge sources in oil and gas industry
  – Interfaces with existing ISO standards and provides the detail on how to implement them to manage risks in oil and gas industry

NOTE: Operating management system should not be confused with an integrated management system
Development of OMS standard (4)

Status

• Support for developing umbrella (OMS) standard for oil and gas operators per resolution 2015/26 (Delft)
• First JS not approved by ISO/TMB, request for clarification
• Updated JS endorsed by ISO/TC 67 and approved by ISO/TMB

TECHNICAL MANAGEMENT BOARD RESOLUTION 126/2017
Request of approval for the launch in ISO/TC 67 of an NP for sector-specific standard (oil and gas) on the implementation of an integrated management system

Adopted by correspondence on 2017-11-24
The Technical Management Board,

Approves the Justification Study for the “Operating Management System” standard, submitted by ISO/TC 67/WG 2 on Operating integrity management for the petroleum, petrochemical and natural gas industries, so that it can be sent to NP ballot in ISO/TC 67.
Development of OMS standard (5)

Status (continued)

• DIS version under development
Development of OMS standard (6)

Status (continued)

• Engaging and seeking involvement of more stakeholders by active participation or sharing best practices / company models
• Developing DIS version containing requirements [*nearly completed*] and guidance supporting requirements [*work in progress*]
• Developing additional guidance, intended to be published on public website of ISO/TC 67 [*under development*]
• DIS version intended to be available by mid 2019
• OMS standard intended to be published in 2020

*OMS standard development strategy paper*
Revision of ISO/TS 29001 (1)

Justification

• Objectives for revision of ISO/TS 29001:2010 are to:
  – Align with ISO 9001:2015
  – Incorporate sector best practices
  – Incorporate sector risk management processes
  – Standardise the sector approach to implement quality and verification requirements
  – Provide clarity on sector documented information requirements
  – Reflect the requirements and guidance within sector complementary quality, technical and conformity assessment standards/specifications
Revision of ISO/TS 29001 (2)

Approach

• ISO/TS 29001 will become full ISO standard building on ISO 9001:2015 with sector-specific supplements, adding value by:
  – Implementing sector best practices
  – Ensuring processes systematically identify and manage organisational and specific product and service risks
  – Incorporating an industry related conformity assessment annex
  – Providing options (data sheet) to avoid over complication
  – Aligning output with IOGP “JIP 33” standardisation project
  – Being equivalent to other industry specific QMS standards
Revision of ISO/TS 29001 (3)

Status

• Decision to initiate revision of ISO/TS 29001:2010 in view of publication of ISO 9001:2015 per resolution 2014/21 (Bangkok)
• JS endorsed by ISO/TC 67 and approved by ISO/TMB
• In addition to sector-specific supplements to ISO 9001:2015, new ISO 29001 will contain informative annex on risk and opportunity management and conformity assessment processes
• DIS ballot received 100 % approval and about 150 comments
• Resolution of comments nearly completed to finalise FDIS version
• Separate guidance documents with comparison matrices [ISO/TS 29001, API Q1 and API Q2] and rationale of supplements to be published on public website of ISO/TC 67 [under development]
• Publication of 4th edition of ISO 29001 expected in 2019
Revision of ISO/TS 29001 (4)

Status (continued)

• Representation (draft) of new annex of risk and opportunity management and conformity assessment processes
Other ISO/TC 67/WG 2 standards (1)

- ISO 13879:1999, Content and drafting of a functional specification
- ISO 13880:1999, Content and drafting of a technical specification
- ISO/TR 13881:2000, Classification and conformity assessment of products, processes and services
Other ISO/TC 67/WG 2 standards (2)

- ISO/TS 17969:2017, Guidelines on competency management for well operations personnel

Scope might be broadened to cover competency management for all kinds of operations in oil and gas sector

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Petroleum, petrochemical and natural gas industries — Guidelines on competency management for well operations personnel
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